

IN THE CLAIMS:

Please cancel claim 2 without prejudice or disclaimer.

Please amend claims 1 and 12 as follows:

C 1. (Currently Amended) A lip-type high pressure seal comprising an annular metallic casing, an annular sealing lip secured to said casing, and a low friction lining bonded to said sealing lip, said sealing lip being made of a high gas barrier, non-elastomeric, polymer material having a gas permeability coefficient of less than 1.0×10^{-13} (cm³·cm/cm²·sec·Pa) for carbon dioxide gas under a pressure of 4 MPa.

2. (Cancelled)

3. (Currently Amended) A The lip-type seal according to claim 2 1, wherein said polymer material has a gas permeability coefficient of less than 1.0×10^{-14} (cm³·cm/cm²·sec·Pa) for carbon dioxide gas under a pressure of 4 MPa.

4. (Currently Amended) A The lip-type seal according to claim 1, wherein said sealing lip is made of polyamide.

5. (Currently Amended) A The lip-type seal according to claim 1, wherein said sealing lip is made of a polymer material selected from the group consisting of polyvinylidene fluoride,

9 polyvinyl chloride, poly-chlorotrifluoroethylene, and polyvinyl alcohol.

6. (Currently Amended) A The lip-type seal according to claim 1, wherein said low friction lining is made of polytetrafluoroethylene.

7. (Currently Amended) A The lip-type seal according to claim 1, wherein said polymer material forming the sealing lip has a high modulus of elasticity.

8. (Currently Amended) A The lip-type seal according to claim 1, wherein said low friction lining covers only a part of said sealing lip which is brought into contact with a shaft to be sealed.

9. (Currently Amended) A The lip-type seal according to claim 1, wherein the ratio of the radial thickness of said low friction lining with respect to the radial thickness of said sealing lip is less than 20%.

10. (Currently Amended) A The lip-type seal according to claim 1, wherein the inner circumferential face of said low friction lining is provided with helical pumping elements for hydrodynamically returning a fluid, having leaked from a sealed side to an atmospheric side, back to the sealed side.

11. (Currently Amended) A The lip-type seal according to claim 1, further comprising a second sealing lip made of a resilient elastomeric material.

12. (Currently Amended) A The method for establishing a fluid seal between a housing containing a high pressure gas and a shaft rotating relative to said housing, said method comprising the steps of:

providing a lip-type seal having an annular sealing lip made from a highly gas barrier, non-elastomeric, polymer material having a rigidity and having a gas permeability coefficient of less than 1.0×10^{-13} (cm³·cm/cm²·sec·Pa) for carbon dioxide gas under a pressure of 4 MPa;

lining the inner circumferential face of said sealing lip with a low friction lining;

installing said lip-type seal between said shaft and said housing in such a manner that only said low friction lining is brought into contact with said shaft; and,

applying a gas pressure higher than about 3 MPa to the fluid side of said seal as said shaft and said housing are rotated relative to each other to thereby cause said sealing lip to resiliently undergo elastic deformation to cause said low friction lining to resiliently follow any shaft run-out under the action of high pressure gas, while substantially preventing permeation of gas by the highly gas barrier nature of said sealing lip.

C) 13. (Currently Amended) A The method according to claim 12, wherein said sealing lip causes the low friction lining into tight contact with the outer periphery of the shaft under the action of high pressure gas to thereby establish a static seal.

14. (Currently Amended) A The method according to claim 12, wherein said sealing lip is made of polyamide.

15. (Currently Amended) A The method according to claim 12, wherein said sealing lip is made of a polymer material selected from the group consisting of polyvinylidene fluoride, polyvinyl chloride, polychlorotrifluoroethylene, and polyvinyl alcohol.

16. (Currently Amended) A The method according to claim 12, wherein said low friction lining is made of polytetrafluoroethylene.
